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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)								DATE February 2000	
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-wide BA2 Applied Research					R-1 ITEM NOMENCLATURE Integrated Command and Control Technology PE 0602708E, R-1 #18				
COST (In Millions)	FY 1999	FY2000	FY2001	FY2002	FY2003	FY2004	FY2005	Cost To Complete	Total Cost
Total Program Element (PE) Cost	38.315	38.126	31.761	0.000	0.000	0.000	0.000	0.000	N/A
Integrated Command and Control Technology IC-03	38.315	38.126	31.761	0.000	0.000	0.000	0.000	0.000	N/A

(U) **Mission Description:**

(U) This program element is budgeted in the Applied Research Budget Activity because it develops the technologies for high definition displays that are important for virtually all DoD applications that involve visual and graphic information. Major components of this program include: projection, head mounted and direct view displays based on multiple technologies; development of equipment and components required to manufacture advanced display technologies; and prototyping of display systems for system evaluation. These efforts will establish a domestic technical capability for the manufacture of components necessary for military systems that capture, process, store, distribute and display high-resolution images.

(U) **Program Accomplishments and Plans:**(U) **FY 1999 Accomplishments:**

- High Definition Systems. (\$ 25.861 Million)
 - Completed development of large organic-based and inorganic display technologies and continued development of flexible substrate displays for command and control applications.
 - Continued development of equipment and components to meet display cost and performance goals. This included efforts in printing and microreplication, field emission display materials, organic light emitting materials and phosphor technology development.
 - Completed first generation integrated display systems and system prototypes for mobile applications. Continued development of large screen command and control system prototypes, to include development of a large area, high resolution.

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- Flat Panel Display. (\$ 5.794 Million)
 - Continued Flat Panel Display manufacturing equipment and materials.
- Flexible Emissive Displays. (\$ 6.660 Million)
 - Demonstrated self-assembled fluidic transport on active matrix flexible backplanes.

(U) FY 2000 Plans:

- High Definition Systems. (\$ 19.454 Million)
 - Develop flexible, rugged displays based on organic electroluminescence and zero-power reflective technology.
 - Develop active matrix backplanes on flexible substrates for high performance/low power rugged displays.
 - Develop enhanced maturing technologies (organic electroluminescence, field emission and flexible field substrates) to performance capabilities required for DoD applications.
 - Demonstrate/insert display technology into DoD systems to evaluate display technology.
- Flat Panel Displays. (\$ 7.000 Million)
 - Continue Flat Panel Display manufacturing equipment and materials.
- Flexible Emissive Displays. (\$ 11.672 Million)
 - Develop higher temperature plastic substrates compatible with display manufacturing.
 - Develop light emitting materials.
 - Demonstrate emissive monochrome display.

(U) FY 2001 Plans:

- Flexible Emissive Displays. (\$ 12.000 Million)
 - Develop reduced water and oxygen substrate permeability.
 - Develop active matrix backplane transistors.

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- High Definition Systems. (\$ 19.761 Million)
 - Integrate organic light emitting diodes on flexible, active matrix backplanes for increased brightness and reduced power. Integrate Field Emission and Phosphor Display Technologies.
 - Evaluate new display concepts for large, high-resolution displays.
 - Demonstrate/insert display technology into DoD systems for display evaluation.

(U)	<u>Program Change Summary:</u> <i>(In Millions)</i>	<u>FY1999</u>	<u>FY 2000</u>	<u>FY 2001</u>
	Previous President's Budget	39.607	31.296	32.000
	Current Budget	38.315	38.126	31.761

(U) **Change Summary Explanation:**

FY1999	Decrease reflects minor repricing and SBIR reprogramming.
FY2000	Increase reflects congressional add for Flat Panel Displays, partially offset by the government-wide rescission.
FY2001	Decrease reflects minor repricing.

(U) **Other Program Funding Summary Cost:**

- Not Applicable.

(U) **Schedule Profile:**

- Not Applicable.

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